

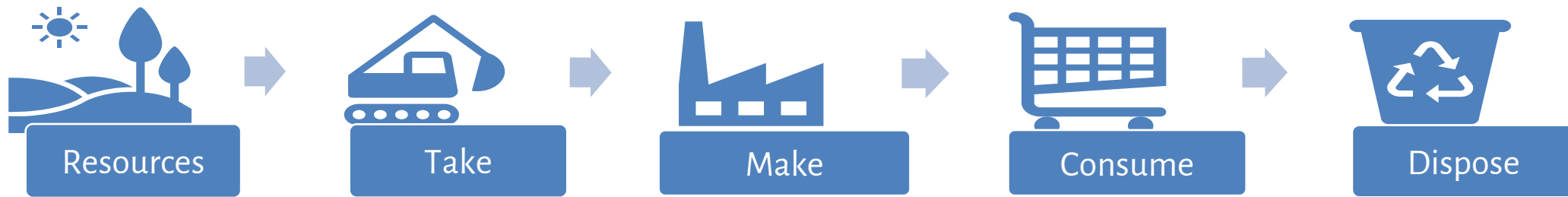


Waste management

Jakub Hanák

Basic aims of waste legislation

- **proper waste management** = without adverse impacts on environment and human health
- limit hazardous substances in waste
- **improve resource efficiency** = waste can be a resource



Product legislation

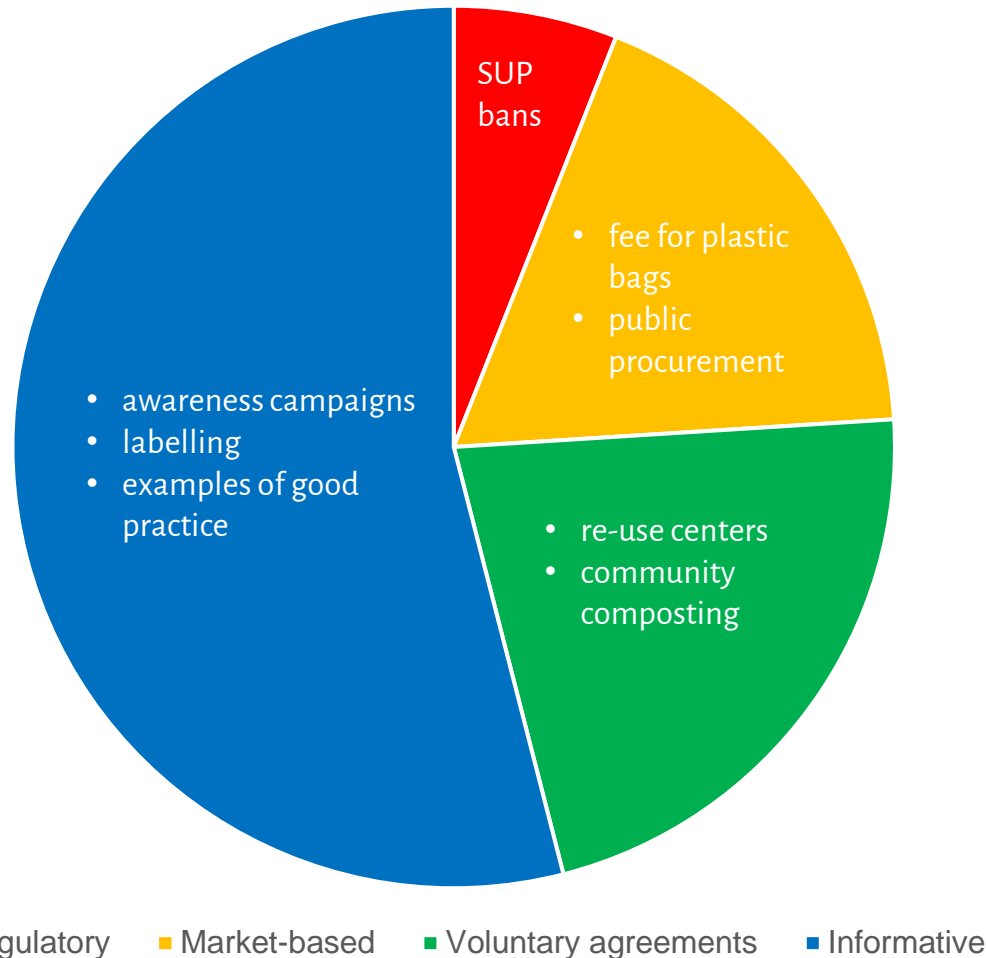
- standards
- labelling
- requirements

Waste legislation:

- **collection**
- **transport**
- **handling**
- **disposal**

Waste prevention

Share of policy instruments



10 zero waste bloggers you should know

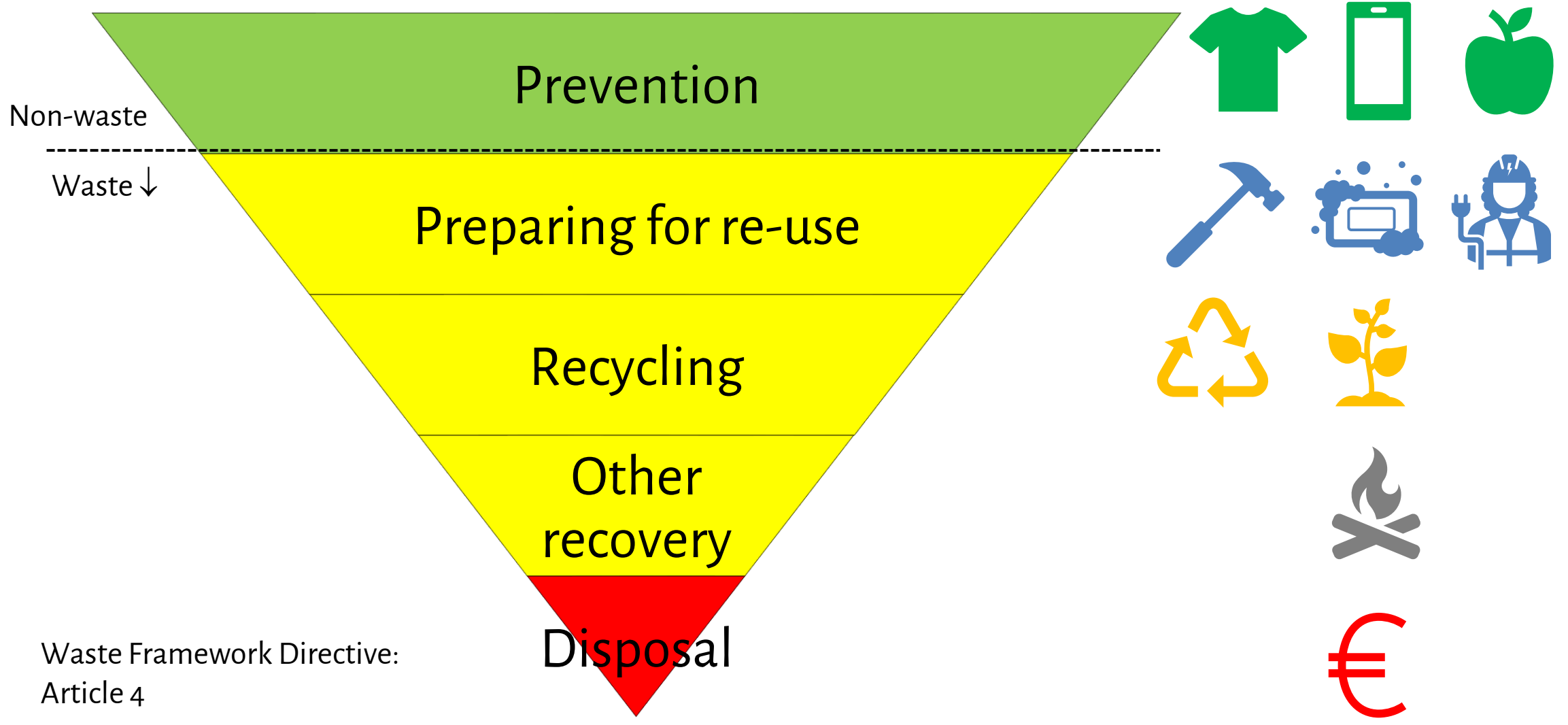


Katherine Martinko [@feistyredhair](#)
March 2, 2017



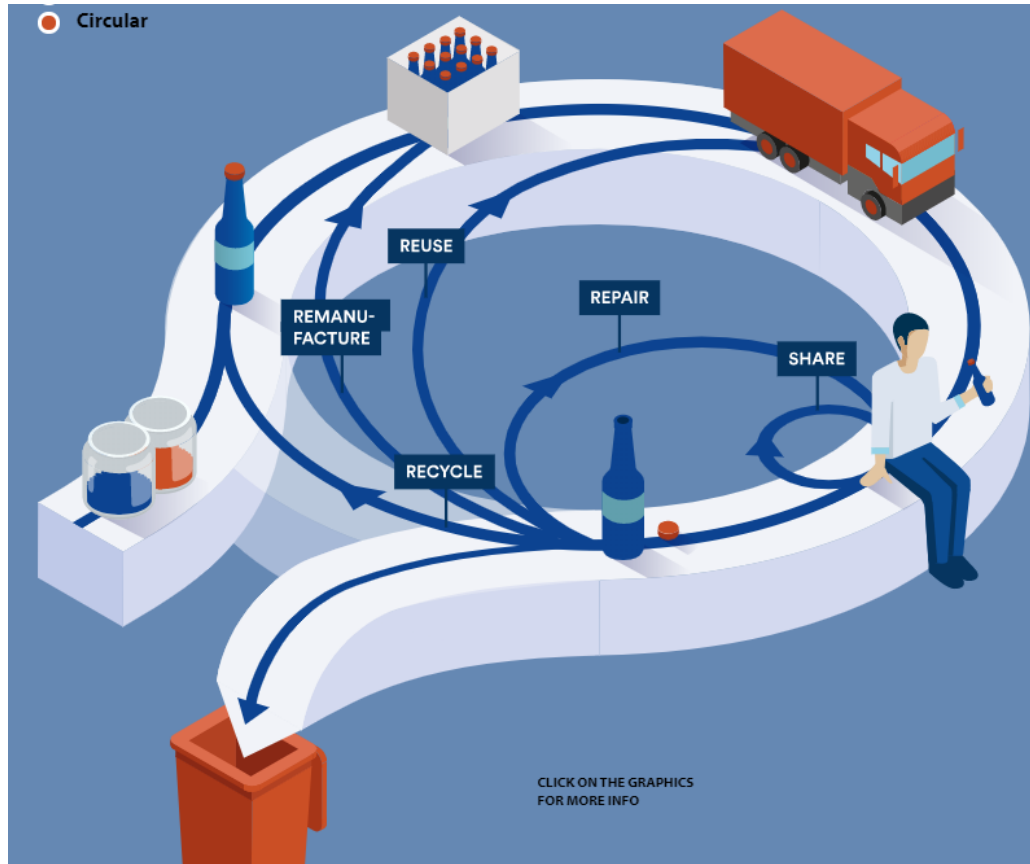
Sources: <https://www.treehugger.com/green-home/10-zero-waste-bloggers-you-should-know.html>
<https://www.eea.europa.eu/publications/progressing-towards-waste-prevention-in> (chart)

Waste management hierarchy → ...



Waste Framework Directive:
Article 4

... → circular economy



Product legislation

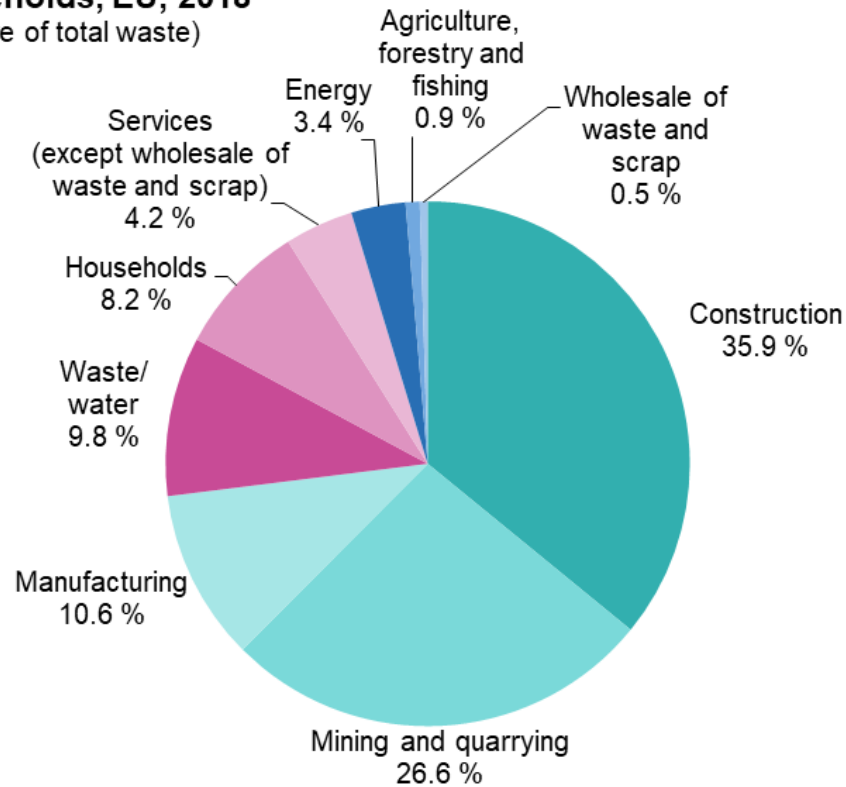
- labelling
- standards
- durability
- requirements
- repair manuals
- recycled content
- recyclable material

Waste legislation:

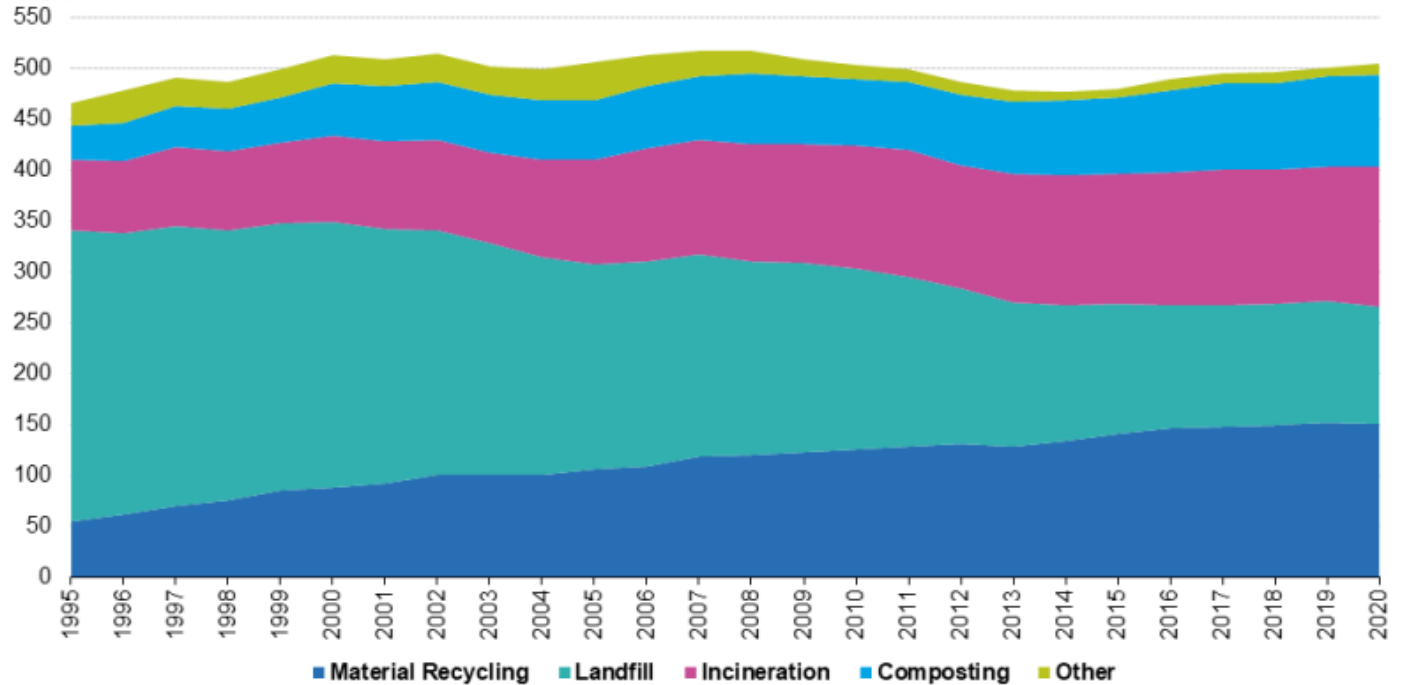
- collection (infrastructure)
- transport
- waste management operations

Waste management: results

Waste generation by economic activities and households, EU, 2018
(% share of total waste)



Municipal waste treatment, EU, 1995-2020
(kg per capita)



Note: estimated by Eurostat.

Sources: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Municipal_waste_statistics#Municipal_waste_treatment
https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Waste_statistics#Total_waste_generation

EU waste legislation: system

- **general framework**

- [Directive 2008/98/EC on waste](#) (WFD) – since 1975
- [Regulation \(EC\) 1013/2006 on shipments of waste](#) (WSR)

- **waste management operations**



- *Directive 99/31/EC on the landfill of waste*
- *Directive 2010/75/EU on industrial emissions: for waste incineration*

- **specific waste streams (e.g.)**

- *Directive 94/62/EC on packaging and packaging waste*
- *Directive 2000/53/EC on end-of-life vehicles (ELV)*
- *Directive 2006/66/EC on batteries and accumulators*
- *Directive 2012/19/EU on waste electrical and electronic equipment (WEEE)*

2023 WFD revision

Despite existing legislation, municipal waste generation has increased over the last decade. Low recycling rates, as well as lower quality recyclates, are in part due to inefficient waste-collection systems. For some specific streams, such as waste oils and textile, evidence indicated that the polluter pays principle is not fully implemented and that some waste may be illegally disposed of, leading to pollution.

Therefore, the Commission is currently working on a targeted revision of the Waste Framework Directive. This revision aims to improve the overall environmental outcome of waste management in line with the waste hierarchy and the implementation of the polluter pays principle, potentially via Extended Producer Responsibility schemes. It will focus on the following policy areas: prevention, separate collection, waste oils and textiles. The [call for evidence](#)  is now open for feedback until 22 February 2022. More information is on Have Your Say: [WFD revision](#) .

https://ec.europa.eu/environment/topics/waste-and-recycling/waste-framework-directive_cs#ref-2023-wfd-revision

Definition of waste & scope of WFD

- „any object which the holder discards or intends or is required to discard“
- these types of waste are **excluded**:
 - *e.g. gaseous effluents emitted into the atmosphere*
 - *radioactive waste*
 - *land (in situ) including unexcavated contaminated soil and buildings permanently connected with land (see case [C-1/03 Van de Walle](#))*
- **excluded to the extent** that they are covered by other Community legislation
 - *waste waters*
 - *waste from extractive industries (→ Directive 2006/21/EC)*

Definition of waste (2)

- **European List of Waste:** [Commission Decision 2000/532/EC](#)

01 Wastes resulting from exploration, mining, physical and chemical treatment of minerals

02 Wastes from agriculture, forestry, hunting and fishing, food preparation and processing

03 Wastes from wood processing and the production of panels, furniture and paper

04 Wastes from the leather and textile industries

05 Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal

...

03	WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PANELS AND FURNITURE, CARDBOARD
03 01	wastes from wood processing and the production of panels and furniture
03 01 01	waste bark and cork
03 01 04*	sawdust, shavings, cuttings, wood, particle board and veneer containing hazardous substances
03 01 05	sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04
03 01 99	wastes not otherwise specified

20	MUNICIPAL WASTES (HOUSEHOLD WASTE AND SIMILAR COMMERCIAL, INDUSTRIAL AND INDUSTRIAL WASTES) INCLUDING SEPARATELY COLLECTED FRACTIONS
20 01	separately collected fractions (except 15 01)
20 01 01	paper and cardboard
20 01 02	Glass
20 01 08	biodegradable kitchen and canteen waste
20 01 10	Clothes
20 01 11	Textiles



Hazardous waste

- which?
 - *is mentioned in the List of waste (*)*
 - *displays one or more of the **properties listed in Annex III** of WFD; Regulation (EU) No 1357/2014*

- duties:
 - *packaging and **labelling** requirements*
 - ***traceability** from production to final destination*
 - ***ban on the mixing** of hazardous waste with other waste or substances*

Definition of waste: interpretation (3)

- *definition: „any object which the holder discards or intends or is required to discard“*
- restrictive interpretation is forbidden: high level of protection
- classification as ‘waste’ is **to be inferred primarily from the holder’s actions**
 - *→ only the holder of the products can prove that he intends not to discard those products (C-113/12; 38, 64: burden of proof)*
- it is necessary to **consider all circumstances** → see 12

Definition of waste: indications (4)

- **the object is produced intentionally** \Rightarrow product! ([C-235/02](#))
- \diamond no danger to environment
- \diamond substances which are **capable of economic reutilization** (recovery) are not excluded
 - *but – significant commercial value* ([C-241/12](#))
- \Downarrow the object is a production residue
- \Downarrow the object holder accepts that it is waste (e. g. transports or stores it in a way that could damage it)
- \Downarrow the object cannot be used for the original purpose ([C-9/00](#))
- \Downarrow substance is a burden on producer

Example



Indications?

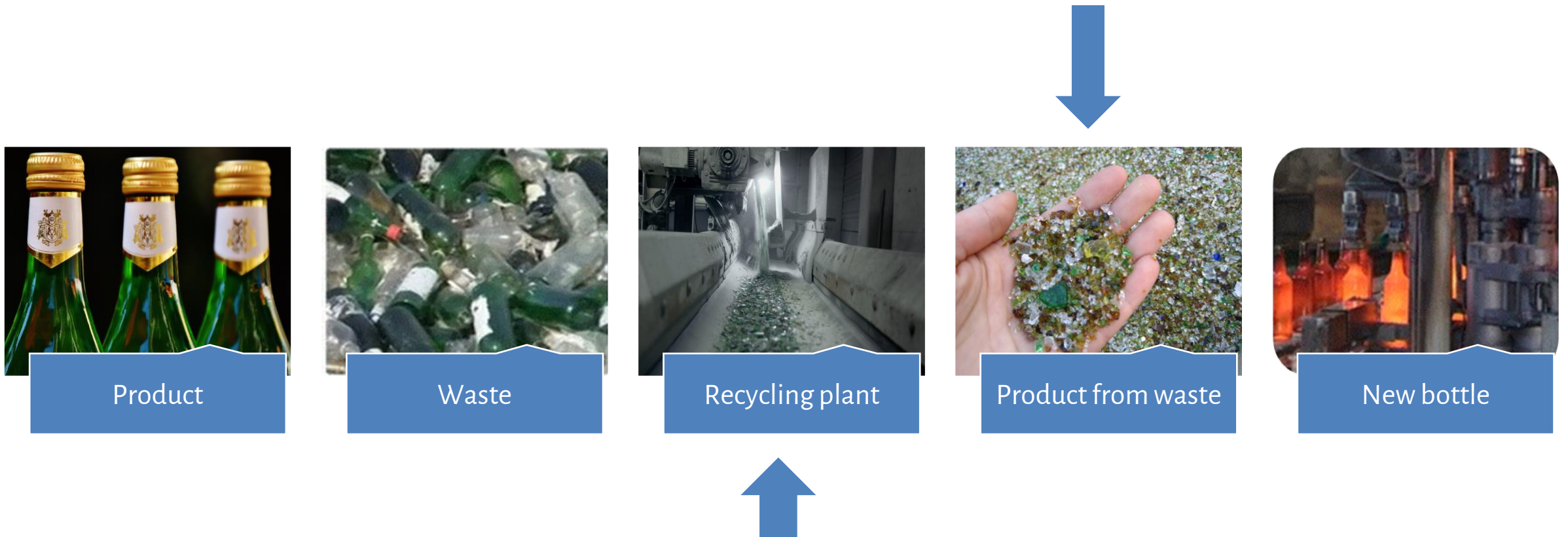


Incineration plant in Brno

By-products

- substance (object) is **result from production process**
 - *but primary aim is not the production of the substance (see slide 12)*
- conditions:
 - *the substance is produced as an **integral part of a production process***
 - *the substance **can be used directly** without any further processing other than normal industrial practice*
 - *further use is **lawful***
 - i.e. the substance fulfils all relevant product, environmental and health protection requirements for the specific use
 - will not lead to overall adverse environmental or human health impact
 - *further **use of the substance is certain***

- Commission Regulation (EU) No 1179/2012 establishing criteria determining when **glass cullet** ceases to be waste
- Commission Regulation (EU) No 333/2011 establishing criteria determining when certain types of **scrap metal** cease to be waste
- Commission Regulation (EU) No 715/2013 establishing criteria determining when **copper scrap** ceases to be waste
- https://ec.europa.eu/environment/news/commission-starts-develop-end-waste-criteria-plastic-waste-2022-04-05_en



- ‘recovery’ means any operation the principal result of which is **waste serving a useful purpose** by replacing other materials which would otherwise have been used to fulfil a particular function

End-of-waste criteria

- **waste has undergone a recovery** and complies with specific criteria based on these conditions:
 - *the substance is commonly used for specific purposes*
 - *a market or demand exists for such a substance*
 - *the use of the substance will not lead to overall adverse environmental or human health impacts*
 - *the substance fulfils the technical requirements for the specific purposes and meets the existing legislation and standards applicable to products*
- [C-358/11](#) (Lapin): also products from dangerous waste

Proper waste management

- MS shall take the necessary measures to ensure that waste management is carried out without endangering human health and the environment
- hand waste over to **persons licensed to handle waste**
- **permits** for waste treatment facilities
 - *may be granted for a specified period*
 - *shall contain*
 - the types and quantities of waste that may be treated
 - the method to be used for each type of operation
- new facility: EIA, IPPC, planning and building acts

Proper waste management (2)



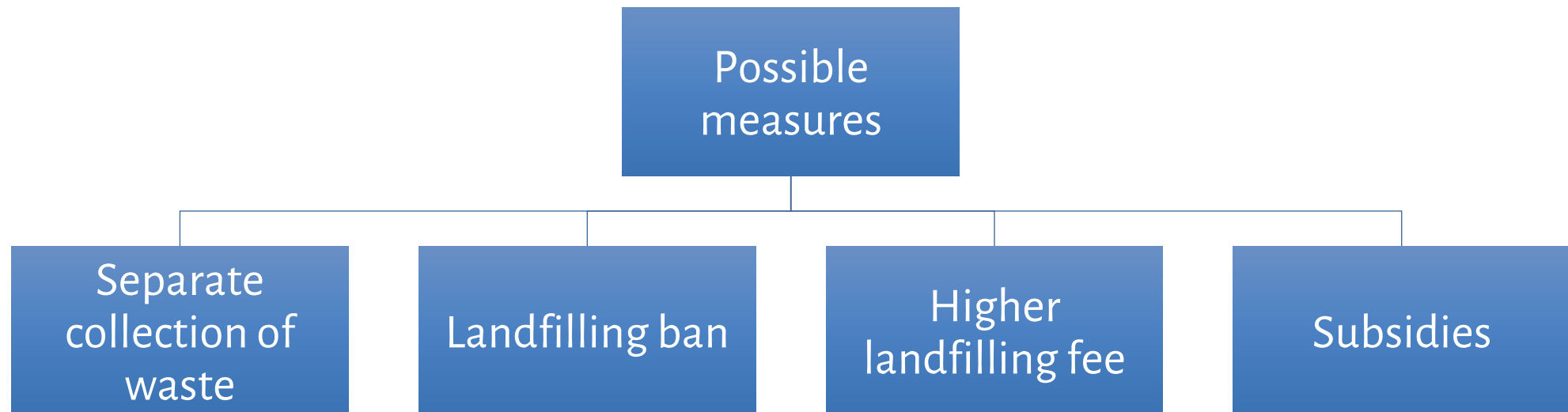
C-297/08: failing to ensure that, Campania region has sufficient installations enabling it to dispose of its urban waste close to the place where that waste is produced, the Italian Republic **has failed to meet its obligation** to establish an integrated and adequate network of disposal installations (see 88)

Landfilling of waste

- landfilling is **the worst waste management option**
 - greenhouse gas – loss of resources – soil and water pollution
- landfill: *„waste disposal site for the deposit of the waste onto or into land (i.e. underground)“*
- landfill **classes**
 - *for hazardous – non-hazardous – inert waste*
- **closing and after-care**
 - *closed after final on site inspection carried out by competent authority*
 - *operator remains responsible for maintenance and control of the site*

Targets: landfills (e. g.)

- by 2016/2020: **biodegradable municipal waste going to landfills** must be reduced to 35 % of the total amount (by weight) of biodegradable municipal waste produced in 1995 (art. 5 Landfill directive)
- by 2035: **the amount of municipal waste landfilled is reduced to 10 %** or less of the total amount of municipal waste generated (by weight).



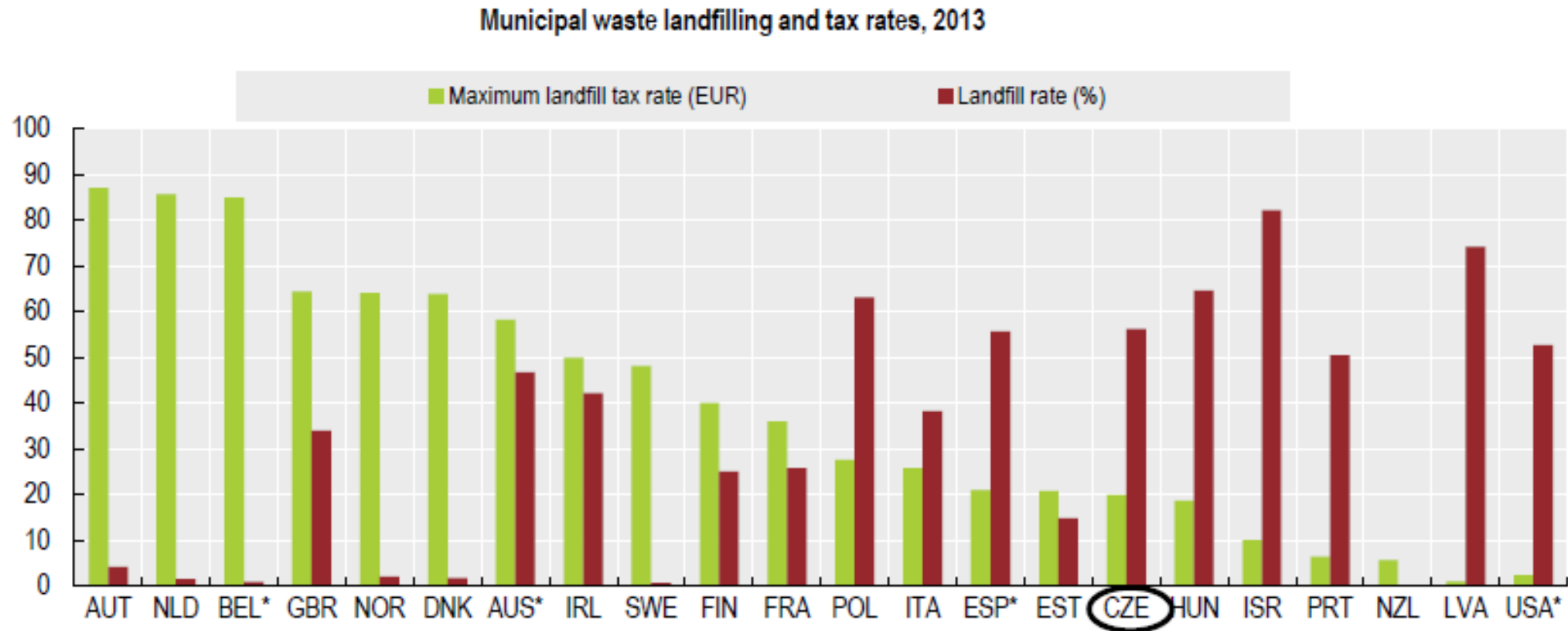
Municipal waste

- definition: mixed waste and separately collected waste **from households**, including paper and cardboard, glass, metals, plastics, bio-waste, wood, textiles, packaging, waste electrical and electronic equipment, waste batteries and accumulators, and bulky waste, including mattresses and furniture; **+ from other sources**, where such waste is similar in nature and composition to waste from households
- **separate collection** at least for paper, metal, plastic and glass (by 1/1 2025 for textiles)
- by 2025: the **preparing for re-use and the recycling** of municipal waste shall be increased to a minimum of 55 % by weight (art. 11 WFD)

Economic instruments

- Art. 14 WFD – „*In accordance with the polluter-pays principle, the costs of waste management shall be borne by the original waste producer or by the current or previous waste holders.*“
- motivation – income – compensation
- **broad discretion by MS**
 - *landfilling fee (CZ)*
 - *incineration fee (CZ)*
 - *local fee for handling of household waste (CZ)*
 - *payment for recovery and recycling of packaging waste and other specific waste (CZ) – see slide 26*

Figure 4.4. Landfilling of municipal waste is encouraged through low landfill taxes




Notes: *tax rates refer to Flanders for Belgium, to New South Wales for Australia, to Catalonia for Spain, and to New Jersey, North Carolina, Mississippi and Indiana for the United States. Landfill rate: Australia are 2015 data, Ireland are 2012 data.

Source: OECD (2017), "Municipal waste", *OECD Environment Statistics* (database); OECD (2017), "Environmental policy instruments", *OECD Environment Statistics* (database).

Source: <http://www.oecd.org/governance/czech-republic-2018-9789264300958-en.htm> – page 177

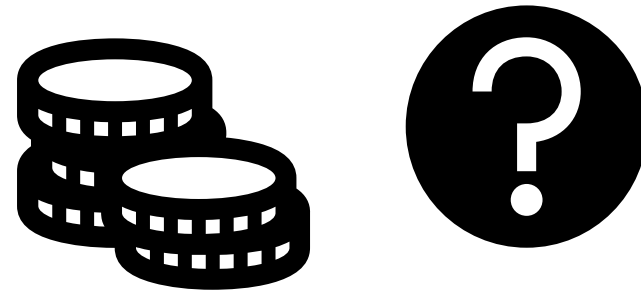
PPP: guiding principle

'Pay as you throw' cuts waste and encourages recycling, French report finds

By Marine Jobert | Journal de l'environnement | translated by Samuel White  9. 3. 2016



Recycling habits improve with "pay as you throw" schemes. [KaliAntye/Shutterstock]



Source: <https://www.euractiv.com/section/climate-environment/news/pay-as-you-throw-cuts-waste-and-encourages-recycling/>

C-335/16 (VG Čistoća d.o.o. v Vladika)

- financing an urban waste management and disposal service
- the competent national authorities have a **wide discretion** with regard to determining how prices are calculated
- the price charged shall not result in the imposition on certain ‘holders’ of costs that are **manifestly disproportionate to the volume** or to the type of waste that they are liable to produce
- criteria relating to the type of property that the users occupy, its surface area and use, the productive capacity of the waste ‘holders’, **the volume of the containers provided to the users, and the frequency of collection**, in so far as those parameters are liable to have a direct impact on the amount of the costs of waste management and disposal.

Extended producer responsibility (EPR)

- duties of producers of **products from which the waste came**
 - *an acceptance of returned products*
 - *subsequent management of the waste (organisational responsibility) and financial responsibility for such activities*
 - costs of waste management could be borne partly or wholly by the producer of the product + ecomodulation
- **e.g.** packaging waste, batteries, electric and electronic equipment or end of life vehicles



The Czech Republic will not introduce a PET bottle deposit refund system

The Czech Republic will not introduce an across-the-board system of PET bottle deposit refund, says Environment Minister Richard Brabec



Written by ČTK
Published on 16.01.2020 14:26 (updated on 16.01.2020)

DAILY NEWS



Plastic bottles in a recycling plant (illustrative image)

Slovakia first country in region to adopt deposit scheme for plastic bottles

By Marián Koreň | EURACTIV.sk

5. 1. 2022



Sources: <https://news.expats.cz/weekly-czech-news/the-czech-republic-will-not-introduce-a-pet-bottle-deposit-refund-system/>
https://www.euractiv.com/section/politics/short_news/slovakia-first-country-in-region-to-adopt-deposit-scheme-for-plastic-bottles/
<https://ec.europa.eu/growth/tools-databases/tris/en/search/?trisaction=search.detail&year=2022&num=72>

Plastic carrier bags

- directive (EU) 2015/720 of 29 April 2015
- aim: **sustained reduction in the consumption of lightweight plastic carrier bags** (wall thickness below 50 micron)
 - *annual consumption level does not exceed 90 lightweight plastic carrier bags per person by 31 December 2019*
 - *or by 31 December 2018, lightweight plastic carrier bags are not provided free of charge at the point of sale of goods*

England's plastic bag usage drops 85% since 5p charge introduced

Number of single-use bags handed out dropped to 500m in first six months since charge, compared with 7bn the previous year



<https://www.theguardian.com/environment/2016/jul/30/england-plastic-bag-usage-drops-85-per-cent-since-5p-charged-introduced>

EU Plastic strategy

- [directive \(EU\) 2019/904](#) on the reduction of the impact of certain plastic products on the environment
- by 3 July 2021



Consumption reduction



Restrictions on placing on the market

- re-usable alternatives
- payments



Product requirements

- 25 % recycled plastics



Marking requirements



Separate collection

COVID pollution: impact of COVID-19 pandemic on global plastic waste footprint



Nsikak U. Benson^{a,*}, David E. Bassey^b, Thavamani Palanisami^{c,**}

^a *Analytical and Environmental Chemistry Unit, Department of Chemistry, Covenant University, Ota, Nigeria*

^b *DR Energy Services Inc., Calgary, Alberta, Canada*

^c *Global Innovative Centre for Advanced Nanomaterials, School of Engineering, University of Newcastle, Callaghan, NSW, 2308, Australia*

ARTICLE INFO

Keywords:

COVID-19
Single-use plastics
Biomedical plastic waste
Plastic pollution
Effective
Waste management

ABSTRACT

Plastic products have played significant roles in protecting people during the COVID-19 pandemic. The widespread use of personal protective gear created a massive disruption in the supply chain and waste disposal system. Millions of discarded single-use plastics (masks, gloves, aprons, and bottles of sanitizers) have been added to the terrestrial environment and could cause a surge in plastics washing up the ocean coastlines and littering the seabed. This paper attempts to assess the environmental footprints of the global plastic wastes generated during COVID-19 and analyze the potential impacts associated with plastic pollution. The amount of plastic wastes generated worldwide since the outbreak is estimated at 1.6 million tonnes/day. We estimate that approximately 3.4 billion single-use facemasks/face shields are discarded daily as a result of COVID-19 pandemic, globally. Our comprehensive data analysis does indicate that COVID-19 will reverse the momentum of years-long global battle to reduce plastic waste pollution. As governments are looking to turbo-charge the economy by supporting businesses weather the pandemic, there is an opportunity to rebuild new industries that can innovate new reusable or non-plastic PPEs. The unanticipated occurrence of a pandemic of this scale has resulted in unmanageable levels of biomedical plastic wastes. This expert insight attempts to raise awareness for the adoption of dynamic waste management strategies targeted at reducing environmental contamination by plastics generated during the COVID-19 pandemic.

Link: <https://www.sciencedirect.com/science/article/pii/S2405844021004485>

WMP&WPP

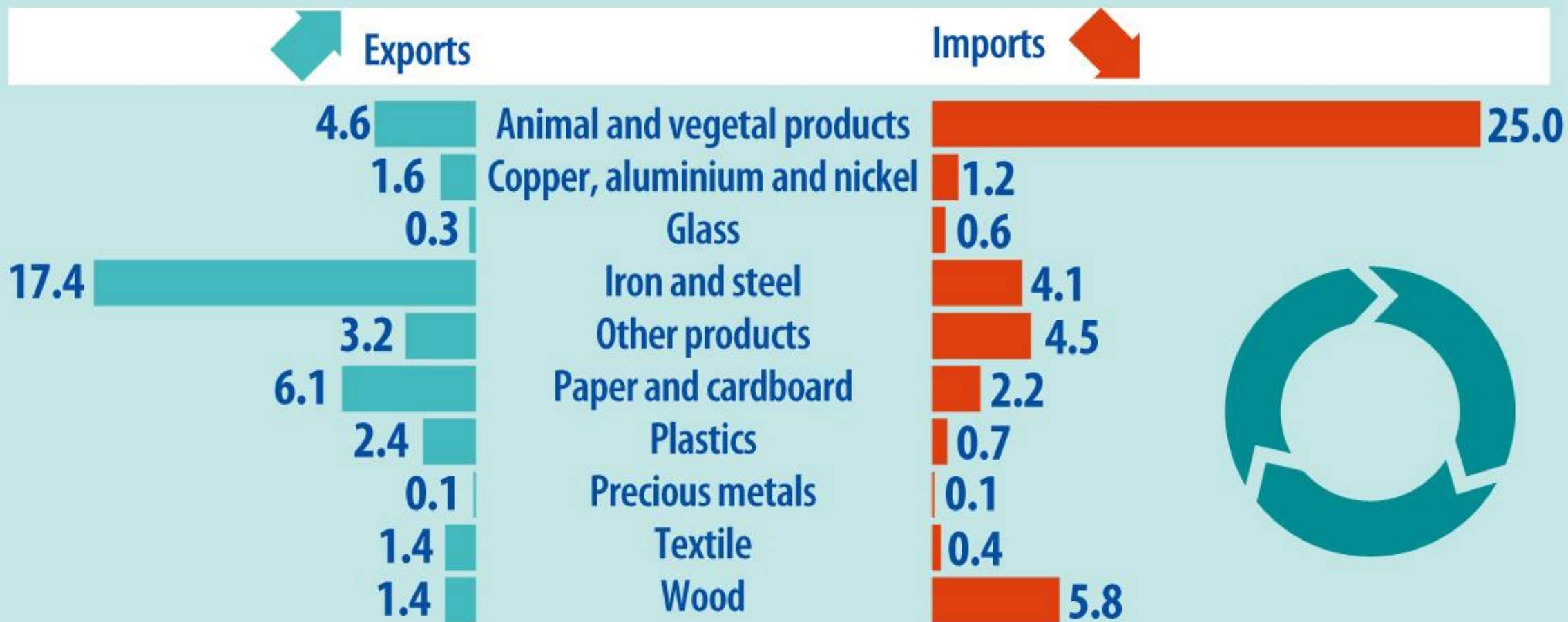
- **Waste management plans**

- *obligation of MS*
- *WMP shall cover the whole territory of the MS*
- *evaluation at least every sixth year ⇒ review*
- *targets & measures*

- **Waste prevention programmes (CZ)**

- *separate document, integral part of WMP or other environmental policy programme*
- *description and evaluation of prevention measures*
 - *see Annex IV WFD: examples of waste prevention measures*

EU trade in recyclable raw materials by category (million tonnes, 2020 data)



Source: <https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20210429-1?redirect=%2Feurostat%2Fweb%2Fwaste%2Fpublications>

ec.europa.eu/eurostat 

Shipment of waste

- **Basel Convention** on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal
- Basel Ban: no export of hazardous waste and waste for disposal to non-OECD countries
- information procedure
 - *waste has to be accompanied by documents signed by exporter and recovery facility*
 - *contract*
- notification procedure

Waste shipment regulation: overview of rules

- waste listed in certain Annexes
- notification through competent authority of dispatch
- prior consent of the authority of destination
 - *reasoned objection on the following reasons*
- take-back obligation (art. 22-25): the shipment is illegal or cannot be completed
- financial guarantee
- checks on shipment (art. 50): during the shipment – at frontiers – at the destination

Questions and Answers on new EU rules on waste shipments

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Why is the EU revising the rules on waste shipments?

Waste can be a valuable resource but it has to be used with care. When waste shipped across borders is not properly controlled and sustainably managed in the destination countries, it can harm human health and the environment. On the other hand, such waste can have a positive economic value and also bring environmental benefits. This is the case when it is recycled and used as secondary materials, therefore replacing virgin materials and contributing to a more circular economy.

https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_5918

Summary

Inspired by [Clelia Antico: Brief overview of the EU Waste Law and Policy](#)

Linear economy

- waste = **unwanted burden**
- producers make products & users use and discard used products
- waste management operators take care of waste

Circular economy

- waste = **profitable resource**
- producers are responsible during **the entire life-cycle** of the product
 - mandatory recycled content; sustainable product;
 - EPR schemes
- waste management operators take care of waste

Summary (2)

